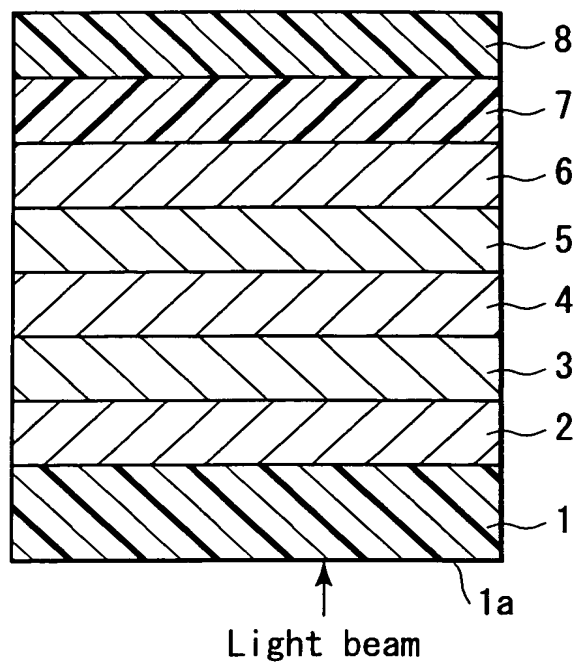


FIG. 1



Second layer

First layer

FIG. 2

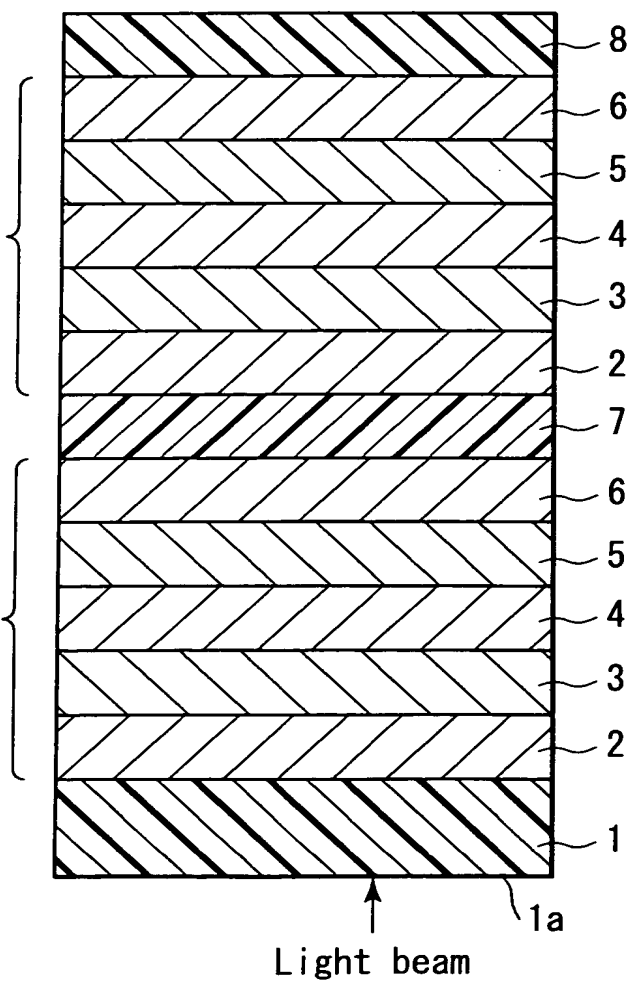
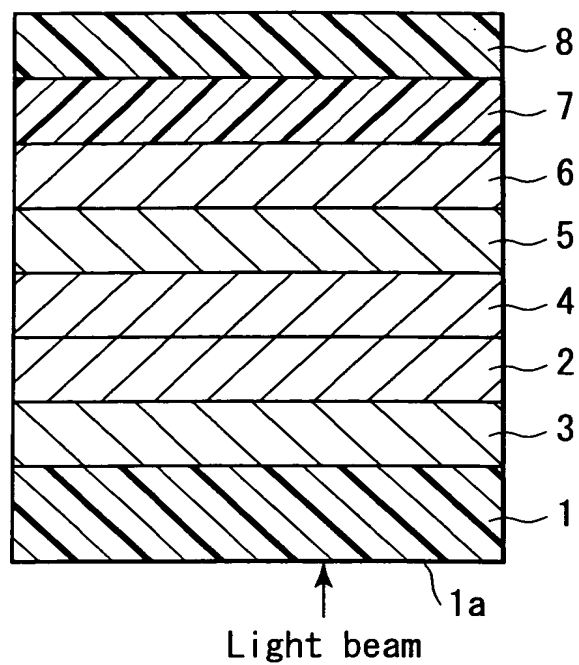


FIG. 3



Second layer

First layer

FIG. 4

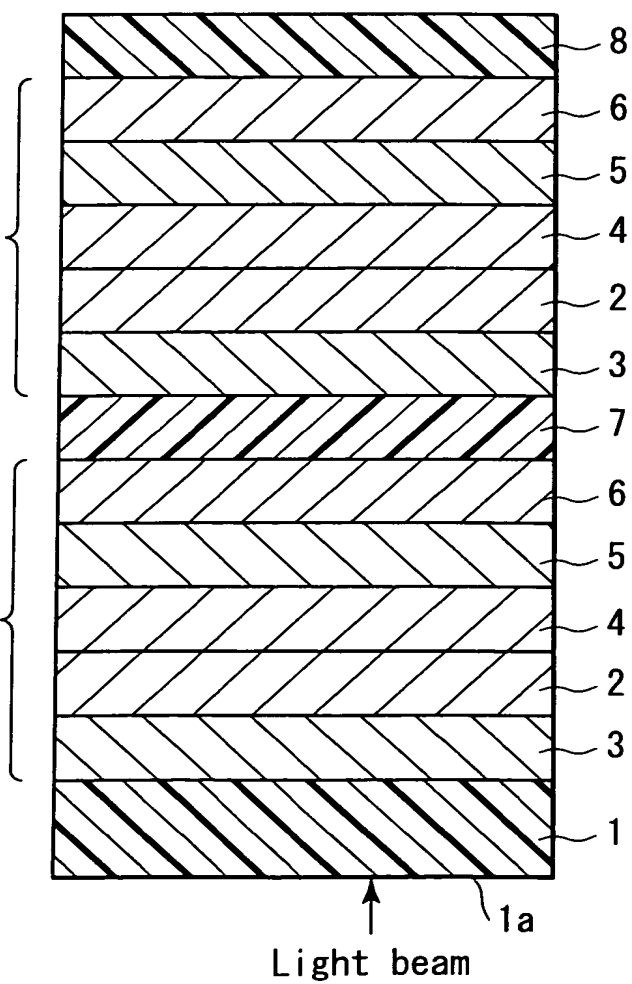


FIG. 5

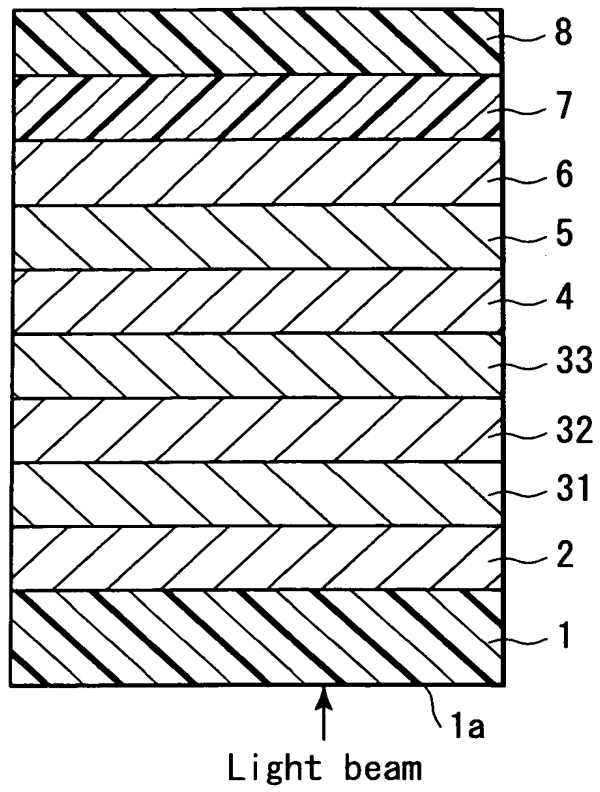
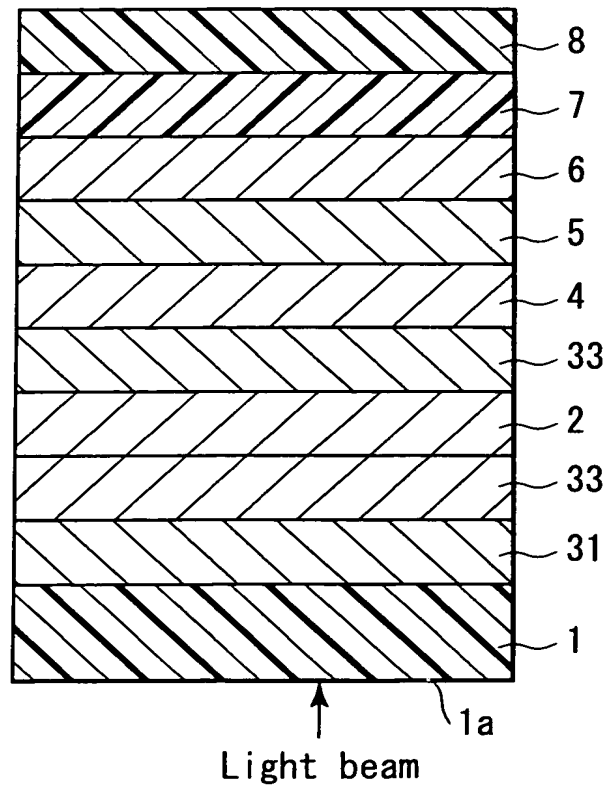


FIG. 7



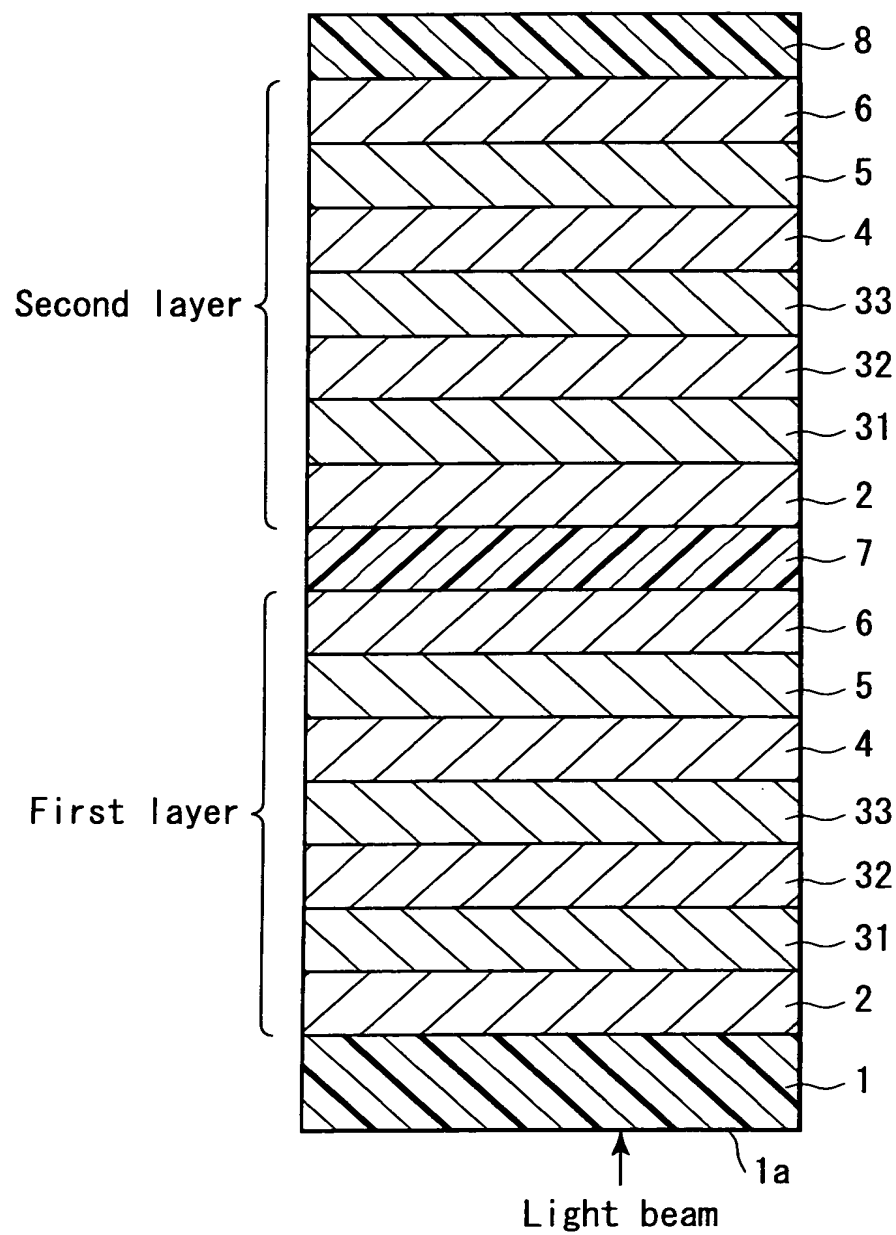


FIG. 6

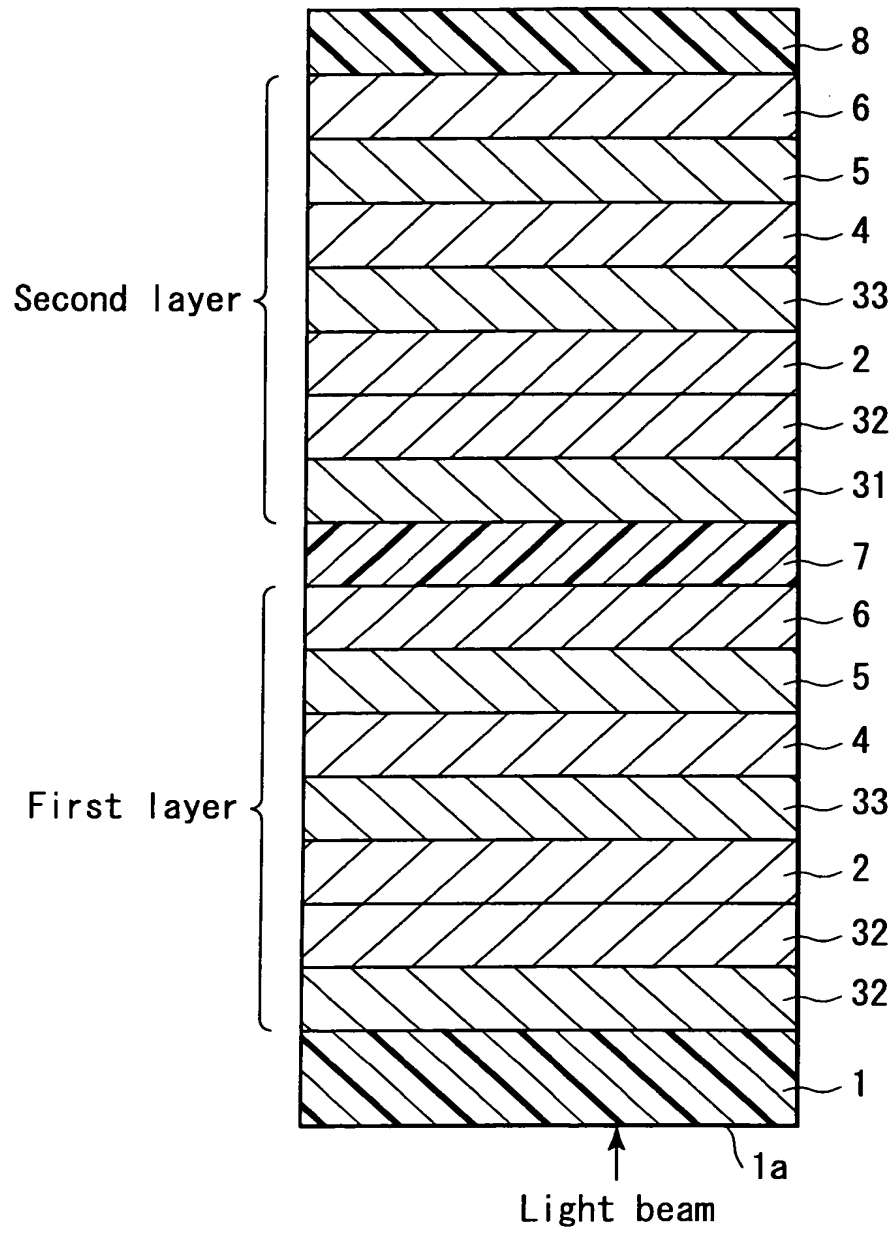


FIG. 8

FIG. 9

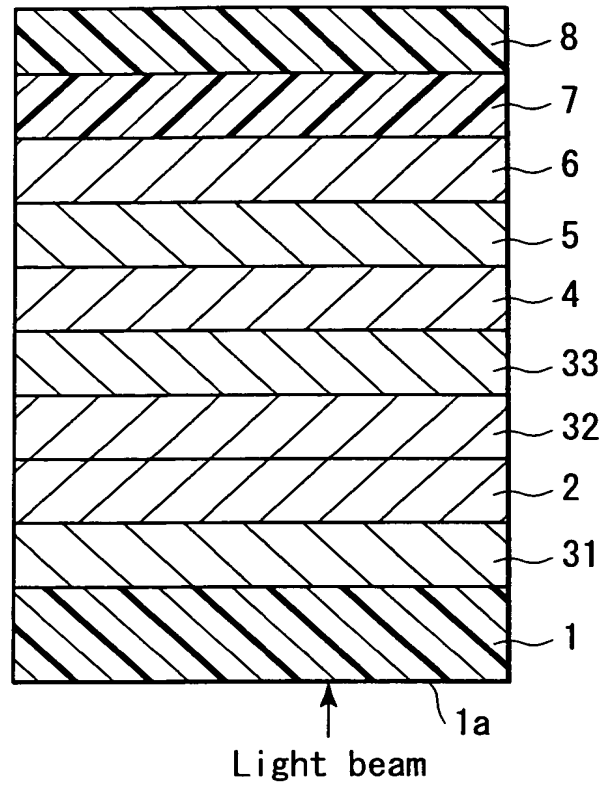
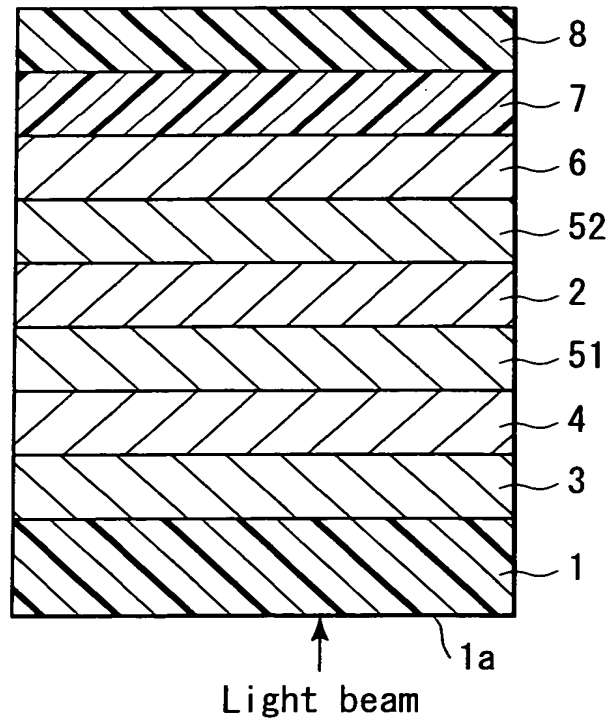


FIG. 11



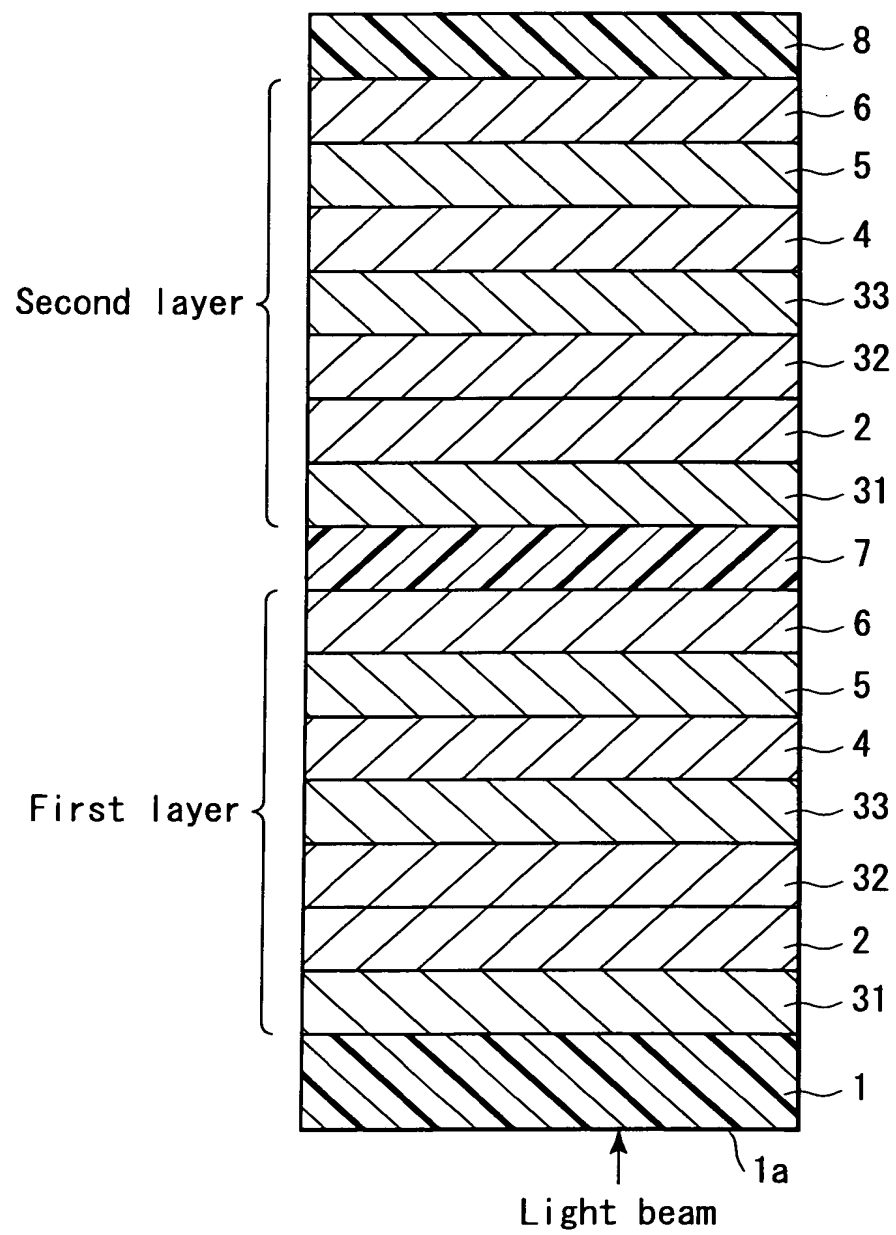


FIG. 10

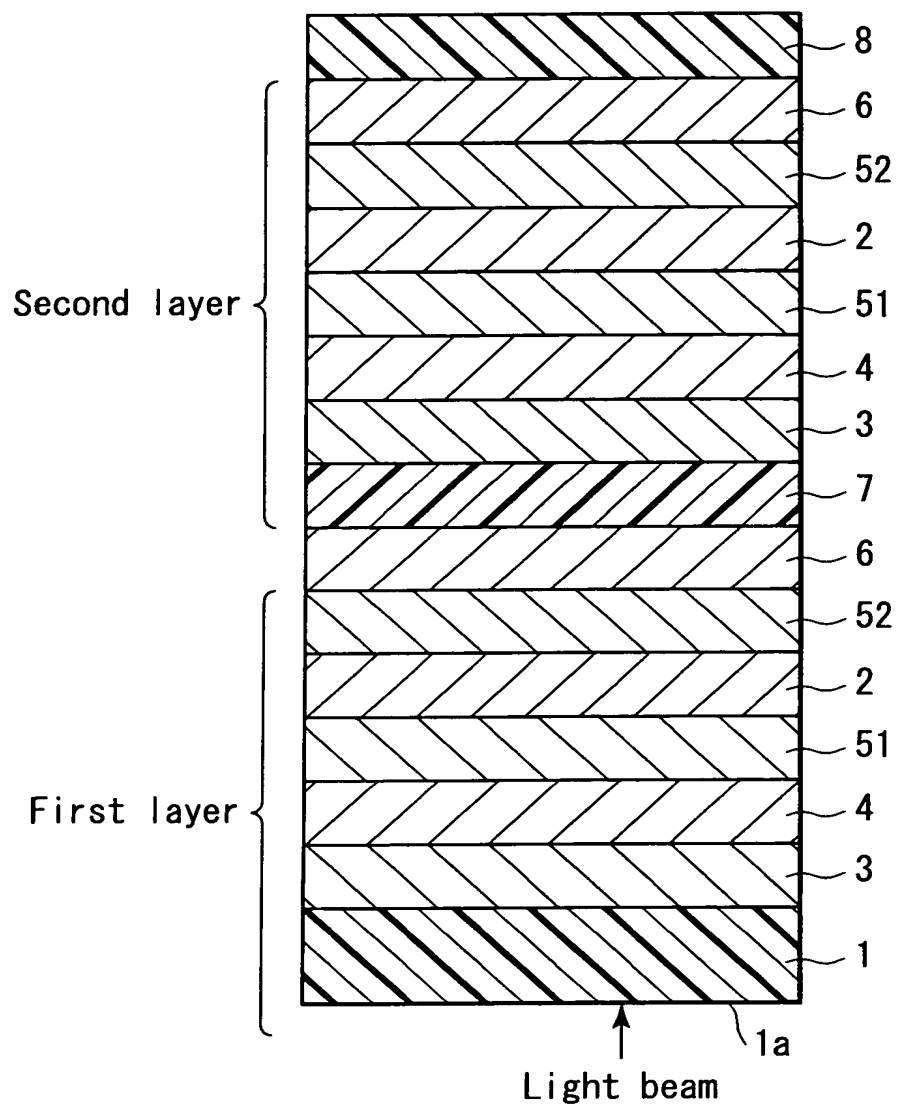
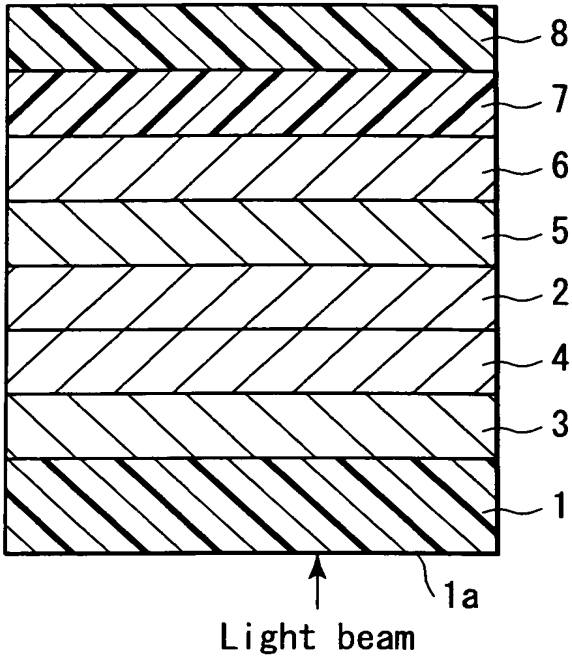


FIG. 12

FIG. 13



Second layer

First layer

FIG. 14

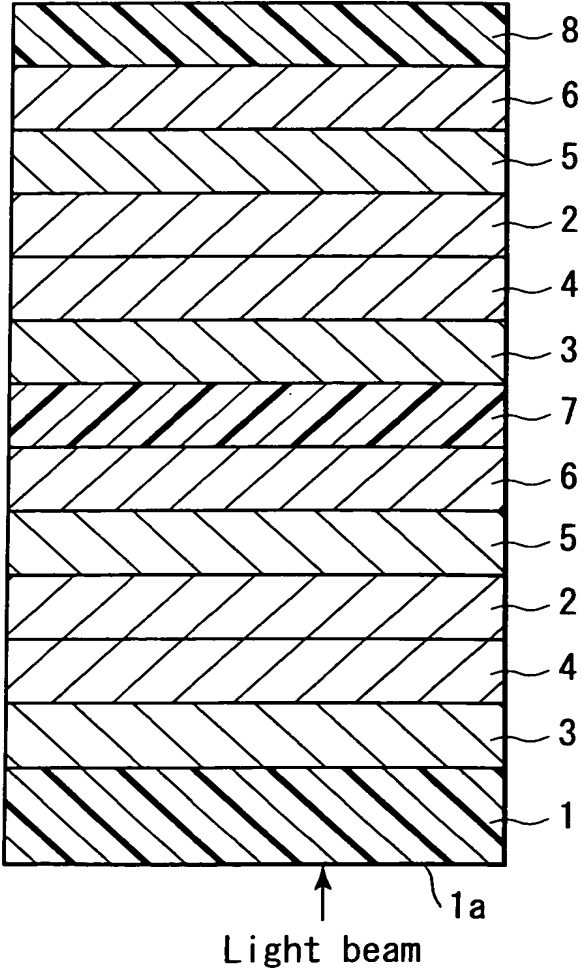
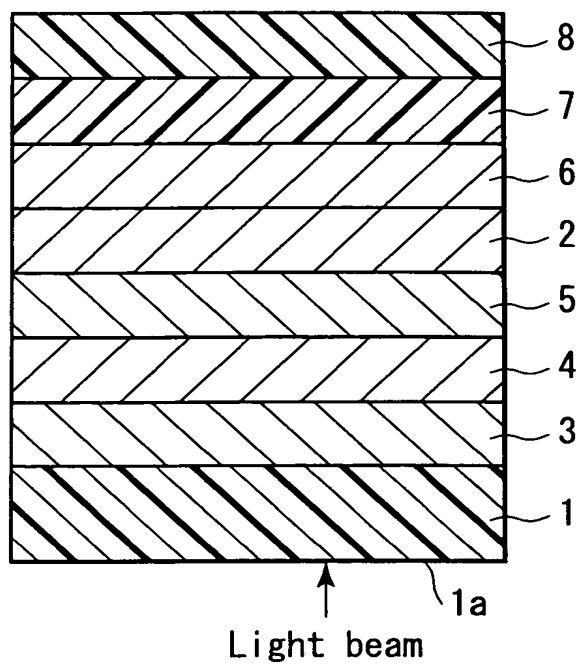


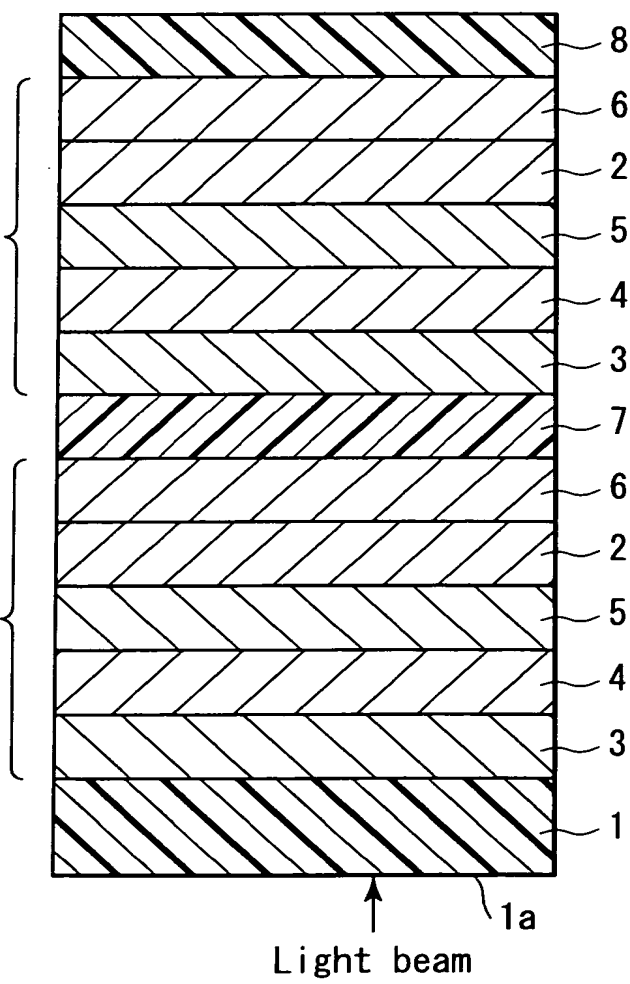
FIG. 15



Second layer

First layer

FIG. 16



Material	κh (W/mK)	Preferable layer thickness (d) range (nm)
Si ₃ N ₄	31	50-500
B ₄ C	30	50-500
SiC	270	6-60
TiC	32	50-480
WC	122	10-120
AlN	260	6-60
BN	390	4-40
Al ₂ O ₃	36	40-420
MgO	60	25-250
ZnO	54	30-280
BeO	272	5-60
GdB ₄	149	10-100
TbB ₄	126	12-120
TmB ₄	158	10-100
TiB ₂	65	10-100
ZrB ₂	58	20-250
DLC	500-1000	1-30
Si	156	10-100

FIG. 17

FIG. 18

Material	Thermal conductivity (κ : W/mK)
ZnS-SiO ₂	0.5
SiO ₂	1.38
ZrO ₂	1.32
BaTiO ₃	1.79
TiO ₂	8.4
Cu ₂ O	5.6
CeO ₂	8.0
Si-Ai-O-N (Sialon)	3.0
Si-Al-O (Mullite)	5.9
ZrSiO ₄	5.5
HfO ₂	2.0
MgF ₂	0.08
CaF ₂	3.1
SrF ₂	0.62
C-H, C-F polymer layer	0.01
C-F sputter layer	0.01
Organic spin-coat layer	0.01

FIG. 19

Material	Thermal conductivity (κ : W/mK)
Y ₂ O ₃	12.5
ZrN	10
NiO	20
ZrC	10
TaC	30
MgO-Al ₂ O ₃ (Spinel)	23.5
SrTiO ₃	11.2
CaO	17
CaB ₆	23
SrB ₆	26
GdB ₆	21
NbB ₂	24

Wavelength	405nm
NA	0.65
Linear velocity	5.6m/s
Shortest bit pitch(2T)	0.13 $\mu\text{m/bit}$
(Shortest mark pitch)	0.173 μm
Track pitch	0.34 μm
Track	Land/groove recording

FIG. 20

Track	Pw/Pe (mW)	CNR after recording 1,000 times on one track(dB)	CNR after recording 1,000 times on adjacent tracks on both sides(dB)	XE (-dB)
G	5.2/2.5	55.6	55.3	0.4
L	5.2/2.5	55.4	55.2	0.4

FIG. 21

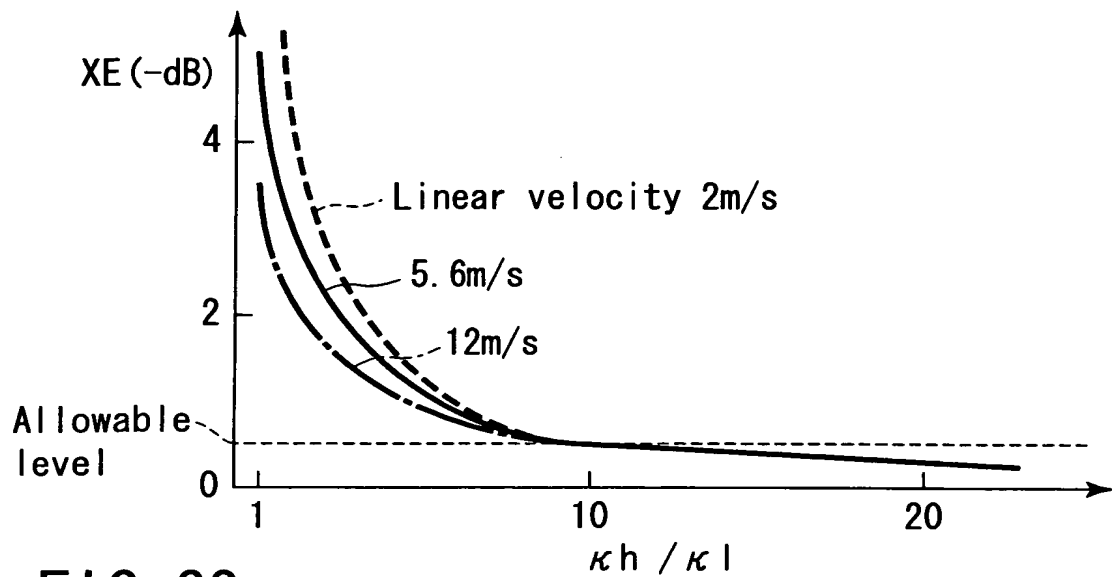


FIG. 22

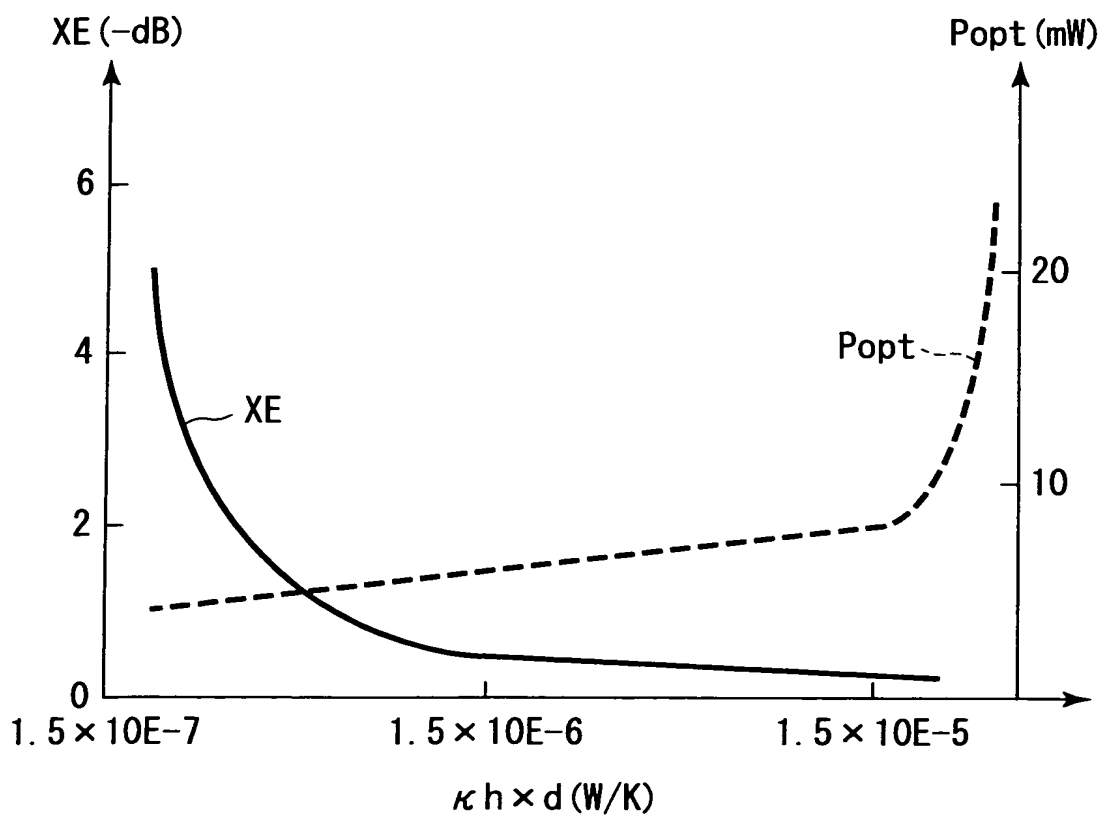


FIG. 23